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ABSTRACT

This paper reviews conditions that have lead to increased college and university course offerings using distance education. Concerns are identified in some recent studies, and comparative course completion data (distance education vs. face-to-face instruction) at two community colleges are presented. Measurement issues are discussed, including a proposal for measurement of key variables involved in studying method of delivery by institutional researchers. This paper asks some difficult questions about why distance education is increasingly offered by postsecondary institutions, despite evidence that students are less likely to complete their courses successfully. (Contains 2 graphs and 21 references.) (Author/SLD)

# Distance Education: Does Access Override Success?

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# Distance Education: Does Access Override Success?

*Abstract*

*This paper reviews conditions that have lead to increased college and university course offerings using distance education. Concerns are identified in some recent studies, and comparative course completion data (distance education vs. face-to-face instruction) at two community colleges are presented. Measurement issues are discussed, including a proposal for measurement of key variables involved in studying method of delivery by institutional researchers. This paper asks some difficult questions about why distance education is increasingly offered by post-secondary institutions, despite evidence that students are less likely to successfully complete their courses.*

There has been phenomenal growth in distance delivery of post-secondary education since satellite and Internet communications became accessible to academic institutions. The impetus to deliver college and university courses via alternate instructional methodologies has grown in recent years, often influenced by a desire to bridge geographic distance between learners and teachers. Roblyer (1999, p. 157) reports that distance learning has become mainstream as an instructional delivery system in higher education. Two of our British colleagues have gone so far as to say "the lecture is under threat. It is being eroded by new technology" (Smith and Whitely, 1999). We have witnessed this tremendous growth in the use of communications technology to offer new learning opportunities, even though evidence about the comparative success of these distance learners is not encouraging.

Considerable resources have been allocated to the design, distribution and delivery of college courses, programs and degrees across dimensions of time and space. Inadequate attention has been paid to questions of student success, and evaluative data on course completions are difficult to interpret.

Given geographical conditions, distance delivery of college level courses has long been characteristic of Canadian post-secondary education history. Queen's University provided its first correspondence courses in 1889, and the history of this century includes correspondence courses with titles such as: "Better Farming" and "Homemaker Short Courses" (Faille, 1999, p. 5). We have taken great pride in the Farm Radio Forum developed at St. Francis Xavier in 1935, and in B.C.'s Open Learning Agency.

Telecourses were a significant step forward in distance education methods, as both the auditory and visual needs of the learner could be addressed. According to Faille (1999, p. 6), by 1992 more universities in Canada that offered distance education courses were using audio or videocassettes than any other method, with the next most frequent mode being the audio/video conference. A National Education Association (Abacus Associates, 2001) report states that there are now two main types of distance education:

web-based courses and course relying upon video technologies. Recently, web based courses have become dominant.

**Institutional motivation**

There are many reasons why colleges and universities now offer increased numbers of courses using distance delivery. Wedemeyer states the belief that "Education should be accessible anywhere there are potential students even if there is just one" (Wedemeyer cited by Faille, 1999, p. 13). The development of distance delivery methods is valued as a contribution to making education and professional development accessible "in the spirit of democratic governance" (Faille, 1999, p. i).

The chance to provide extended learning opportunities to larger numbers of students has many community colleges moving to increase amounts of distance education. Easterday (1997) reports that three factors contribute to the expansion of technological applications: access, technology, and diversity. Access is evident in the mission of the community colleges. Technology has changed so significantly that systems are available for such undertakings. Student populations have become more diverse and their needs have become increasingly specialized. Roblyer (1999) states that many institutions fear they will become extinct if they do not offer courses and degrees through distance learning.

Distance delivery of college level instruction is about access, and in this form became a key commitment of the British Columbia government. In 1996, the community colleges and institutes in BC were encouraged to get involved in distance education in a strategic planning document. One objective under the goal of 'Access' stated: "To enhance participation in post-secondary education and training through a combination of established and innovative delivery strategies, including new provincial, national and international alliances, through brokering models and through distance learning" (BC Ministry of Education, Skills and Training, 1996, p. 36).

One impetus for developing distance education programs could be financial. Roblyer (1999, citing Young, 1998) sees distance technology as a way to reduce costs. Easterday

reports a college that "generated full-time equivalent funds and tuition of $3.00 gained for every dollar spent on a distance learning program" (1997, p. 32), and that community colleges have seen telecommunications as a way to do "more with fewer people" (1997, p. 28). The evidence on whether these cost savings are real is not conclusive. Formats like interactive television require successful teamwork between instructional faculty and technical production experts. There are also significant costs associated with transmission bandwidth. Carter (1996) lists many costs that may be overlooked: in addition to the technologies for operating the system, the environment from which to broadcast, and the costs of transporting materials to the learner, there are additional direct costs to the learner (sometimes as additional tuition, space, technology and connection charges).

Two Cases

North Island College has been delivering distance education since its inception. Motivating factors for distance delivery of courses include: a diverse geographic region, having instructors in remote locations who need additional workload, and over-enrollment in classroom courses at campuses. The college region covers a large and sparsely populated area of coast and mountains, with locations that must be reached by ferry or logging road. Faculty members who work in small centres have the academic credentials to teach subjects far beyond the requirement to take those subjects within the local geographic area.

Camosun College became involved in distance education primarily because of faculty interest: distance education was seen as a way to facilitate instructor development and add to the value of student learning. There was a desire to augment face-to-face delivery with other methodologies: The institution had motivated, experimental faculty members who were interested in trying new methods: efficiencies and space limitations were not seen as major factors. Both students and faculty had noted a need for flexibility in time scheduling (asynchronous delivery).

**Course completion data**

> Internet instruction has nearly all the problems of traditional instruction, plus the difficulties intrinsic in doing something different within an organization that has stayed the same, as most colleges have. If colleges are to get serious about the Internet, they must commit funds, people and time, and must change the nature of the organization (Levin, 1999, electronic version).

The search for data on course completions in the literature was revealing. A search using keywords of "distance education" AND "student success" in Academic Search Elite yielded one study (Crequer, 2000). A similar search ("distance education" AND "course completion") turned up eight sites; however, three were completely unrelated to the discussion in this study, as they used the concept of distance education to refer to off-campus and non-traditional programming of various sorts (i.e. weekend college, offerings outside an institution's geographic area).

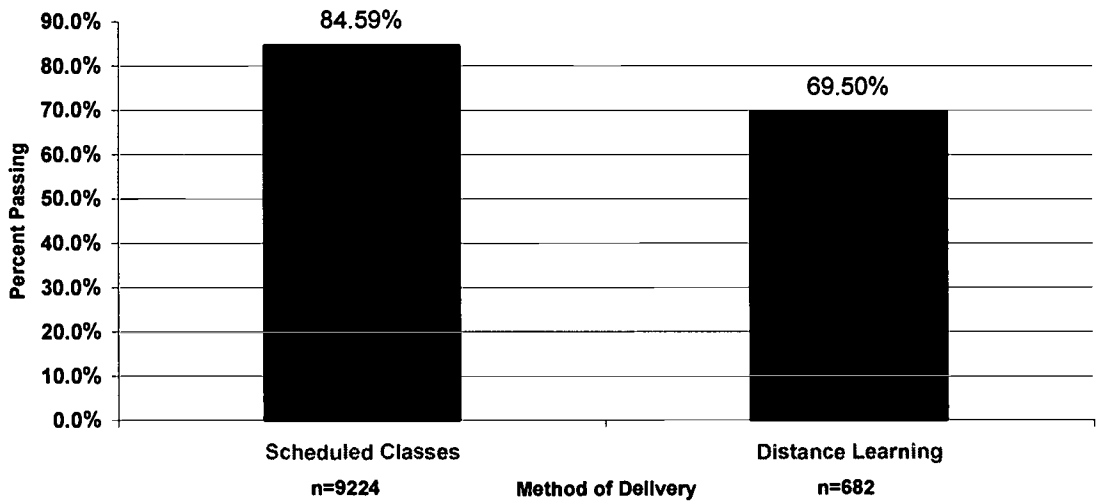
Both drop-out rates and rates of course non-completion seem to be higher for distance education than face-to-face instruction. Studies consistently report that dropout rates are higher and course completion rates are lower for distance education courses than in their face-to-face equivalents (Carr, 2000; Easterday, 1997; Roblyer, 1999). In general, course completion rates in the literature have been reported as lower than 'traditional' classroom delivery. Speaking about students who actually started their distance learning course (as opposed to registering but not ever sending in an assignment), Appearing initially to offer contrary evidence, Easterday (1997, Electronic version) reports that: "Students' success did not suffer as a result of the instructor being at a greater distance than normal." However, he does recognize "high drop-out rates associated with distance learners" and cites studies showing overall distance course completion rates averaging 63.4 percent. Hyatt (1992, cited in Easterday, 1997) has examined completion rates in terms of mode of delivery, finding higher success rates obtained through instructional television fixed services and lowest rates for videocassette instruction.

Neither Camosun College nor North Island College has had high proportions of students completing their distance education courses. Data presented below represent the

1999/2000 academic year and almost 20,000 course registrations at the two colleges. Developmental or Adult Basic Education course registrations have been removed from both data sets, leaving only what we would consider 'college-level' courses.

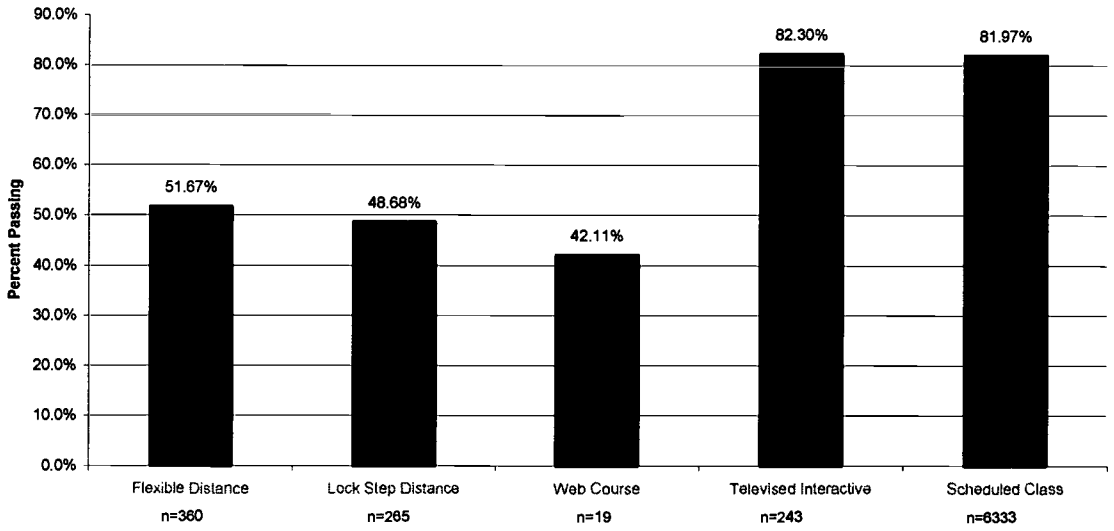
Camosun College has examined levels of grade outcomes for the period from April 1999 until December 2000, a study involving eight disciplines and 9,906 student course registrations. Only 7 percent of the total course registrations were offered as distance delivery (682 course registrations). As shown in the chart below, the students enrolled in distance education were less likely to successfully complete their courses (69.5% compared to 84.6%). The lowest successful completion rate was encountered in Biology distance courses (46.7% compared to 69.2% for classroom courses) and the highest in Geography (68.8% compared to 75.4% for classroom courses).

**Graph 1: Camosun College 1999-2000**
**Percent Passing Courses by Delivery Method**




Carr (2000) cites data that indicate a higher completion rate for video-based distance education (77%) compared with Internet-based courses (58%). North Island College has collected such data in terms of the important variable 'mode of delivery'. The data presented in the graph for this institution corroborate Carr's results: 82.3% of students taking interactive telecourses passed, while only 42% of those taking web based courses passed.

**Graph 2: North Island College 1999-2000**
**Percent Passing Courses by Delivery Method**
**Drops have been omitted**




**The Practice of Institutional Research: Method of delivery as a variable**

It should not be difficult to collect data on this growing sector of our institutional activities, but it is. Wallace (cited in Faille, 1999) reports that statistics about distance education often cannot be readily separated from other forms of teaching. It is imperative that registrars and institutional researchers begin to routinely apply definitions of distance and distributed education to their student course databases. One purpose of this paper is to ask members of this field to work with their institutions to regularly collect this information. Institutional researchers cannot contribute to the understanding of student success in distance education without resolving some methodological issues. I propose some definitions of various attributes of distance education. When conducting research about distance education, I recommend that the following concepts be clearly stated: method of delivery, mode of delivery, time dimension and pedagogical model.

There are a number of definitional issues that contribute to difficulties understanding the research literature in this area. The most obvious is: "What is distance education?"

Distance delivery, for this paper, includes those activities in which the learner and teacher are spatially separate: the learner cannot catch a cold from the teacher. This may appear self-evident, but it is not. While reviewing a paper entitled "Evaluating distance education courses: the student perception" (Tricker, Rangecroft & Long and Gilroy, 2001) I was on page five before I realized that the 'distance education' in the title was unlike the distance education models that I was studying, since it involved off-campus and off-season face-to-face programming. Since teachers and learners come together in these programs, I suggest that they be considered face-to-face delivery, or a hybrid model in our definitional strategies.

One area of frequent overlap involves the use of the terms "distance delivery" and "distributed education". Distributed education includes a wider range of delivery methods, as it applies generally to the use of communication technologies in education. Therefore, distance education almost always is distributed education: the exception being the mailed "course in a box" with mailed assignments. However, considerable applications of distributed education are not distance education, since these distributed methods may be used even while faculty and learners have a schedule of meetings in the same space.

**Method of delivery**: A definition of distance education that primarily uses the spatial separation of teacher and learners has been proposed. This leaves the categories for method of delivery being: classroom, distance, or mixed. Coding must reflect whether the students see each other regularly for classes, whether they do not, or whether they see each other for at least an orientation session. The NEA report (Abacus Associates, 2001) defines distance learning (DL) as courses in which more than half the instruction takes place with students and faculty in different locations. I recommend coding activities as mixed distance delivery when students and faculty get together at least once, as I expect that any visual connections between learners makes a difference to their success.

**Mode of delivery**: The mode of delivery is the means used to transfer content between the teacher and learner. Chen (1997) uses the term 'delivery mode' with categories of mail, radio, operator-assisted, telephone, microwave, satellite and cable; and the 'systems of delivery' as print, audio, electronic, video and computer. Most courses use multiple modes of delivery. A particular distance education course can be configured according to different communication needs and situations rrom the menu of mail/print, television, Internet/web, satellite, fax, CD Rom, radio, cassette, and telephone delivery modes.

**Time dimension**: One of the most interesting dimensions when studying distance education is that of time. Distance delivery may be 'asynchronous', 'synchronous', or mixed. Synchronous course learning occurs when learners and teachers must be communicating at the same time. Examples of synchronous course timing models used in distance delivery include single broadcasts of television or radio shows, satellite transmissions of interactive audio/video, and virtual chat rooms. Asynchronous refers to the ability of students to conduct their learning at any time and from any place (Kubala, 1998). Asynchronous communication is used in e-mail, usenet groups, bulletin boards and websites (Palloff and Pratt, 1999).

**Pedagogical model**:

Course differences along the continuum between interactive and open leaning reflect various instructional philosophies and teaching styles. The educational model of 'open learning' is independent study (Wedemeyer, cited in Faille, 1999, p. 13), and calls upon the skills of learners to self-monitor, being organized and goal oriented. Face-to-face learning can more easily facilitate connected learning that is collaborative, and ideally calls upon the skills of learners to reflect, work in teams and communicate. Modern writing about distance education (e.g. Palloff and Pratt, 1999) gives advice about how to develop skills of collaborative and transformative education while using distance delivery methods.

**Interactivity in distance education**

A substantive change in the ability to use andragogical practices (Knowles, 1984) occurs when distance education makes use of interactive technologies such as interactive television. Interactive television allows for both student-instructor and student-student interaction, building on adult students' needs to have relevance and be involved in problem solving as part of their learning experience. Evidence is mounting that the courses with the greatest amounts of interactivity are those with the highest rates of student completions. Some distance education models that involve distributed learning (especially interactive satellite delivery) show comparable rates of student course completion asface-to-face instruction. Interactive television offers several benefits to students: it allows instructors to give immediate feedback to learners, and a teacher-student relationship is fostered. An earlier study at North Island College (Beatty-Guenter, 1998) has shown that students generally view this method favorably, and have positive learning outcomes associated with courses delivered using this technology. Students in interactive television courses reported levels of course satisfaction almost equal to those in face-to-face courses, and completion rates in 1999/2000 (82.3%) marginally higher than scheduled classroom courses (82% completions).

For the students at the 'far' end of interactive telecourses, this mode of delivery is distance education as it bridges the gap of geography. However, the synchronous time dimension and meeting of students into shared space contributes to the interactivity characteristic of successful adult learning experiences. These synchronous and interactive learning modalities cover the distance between teacher and learners in short seconds, with both seemingly adapting successfully to the slight 'blurring' of effect that the transmission creates on the receiving television sets. It would seem that the participants do not all need to be in the same room, provided that they can interact with each other, clarifying as required, and benefiting from the dialogue that is part of the instructional process. There may be some motivational effects of having learners and teachers come together over distance using a synchronous model. The assignment of a particular time each week to "class work" provides a structure to the learners' workweek.

Carefully designed web based courses need to build in requirements for student-student interaction, not just student-instructor interaction. Well-designed interactive distance courses encourage students to be active learners, and allow for developmental conversations that will result in greater comprehension. Kubala (1998) notes that successful on-line learning requires that there be regular contact between the instructor and student, and that on-line students will participate in 'discussion' more than if they are in regular classroom situations. Carr and Carnevale (2000) cites evidence that "shy students" will participate more easily than if they were in traditional classrooms.

The key factor is interactivity (Muirhead, 2000). Students and faculty members need to be able to interact around cognitive and affective dimensions. They do not need to be in the same space to do this, but they need to have established connectivities. Teaching is not just about learning objects and learning is not just about content. Carr (2000) uses the heading of frequent contact to describe successful distance education courses: professors e-mail their students frequently, remind them about assignments, and develop personal touches to make contact. Interactivity is the spark that fires a successful instructional activity. My hypothesis is this: the higher the levels of interactivity, the higher the course completion rates.

Instructors serve as a source of motivation and encouragement for students (Catchpole, 1986). For students who are not completely self-disciplined, the instructor must actively encourage the student to successfully complete a course. Instructors inspire students partially by relating professional experiences relevant to the course materials: such anecdotes make the topic come to life and capture student interest. Successful distance learning methods have been described by Abacus Associates (2001) as involving full-time faculty, with relatively small classes of students, using highly interactive methods. They note that instructors spend more time on their distance learning courses than their classroom based courses.

**Conclusion**

Distance education can offer educational opportunities to students who may not otherwise have them within range. The most obvious benefit of distance education is the greater flexibility it offers, as students are not required to attend scheduled classes. Some students prefer to study independently and at their own pace. They might perform better when not exposed to group distractions; and have sufficiently well developed self-regulatory behaviour to be successful at distance learning (King, Harner and Brown, 2000). What is worrisome is the possibility that distance learners may be those who feel culturally or psychologically separate from the mainstream educational system, and do not participate in post-secondary education for psychosocial reasons. Are distance education students those who are already marginalized in our society? If we are offering these students a lower chance at succeeding, then we have to question our design and programming decisions. I question the wisdom of our practice to offer more courses that need additional support, yet achieve lower levels of course completions.

Distance education is growing at most institutions, yet we currently do not know enough about course completions resulting from the various methods of delivery. Some of those students who succeed in distance education are those who would not otherwise have been able to gain access at all. Yet the evidence examined so far makes one wonder whether we providing the appearance of access, but adding to the already difficult burdens of those who tend to have the greatest challenges for post-secondary educational success? What is it about successful instructional methods that can be used in distance education to overcome isolation?

There are three main conclusions to be made from this paper. First, institutional researchers are asked to code method of delivery in course records at their institution. Secondly, they are asked to bring institutional awareness of this problem to academic circles in their profession and institution. Thirdly, they are asked to research methods of distance delivery that are effective, thereby contributing to the growth of how we might use technological advances to achieve significant learning across the dimensions of geography and time. Institutions must plan and study these questions, or "distance

education will simply become yet another technological solution in search of a problem" (Carter, 1996, p. 130). Without action on this front, it may appear that those of us in higher education are not learning from our failures.

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